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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,760	08/01/2001	Steven R. Moore	D/A1143	2731

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EXAMINER

NGUYEN, HOAI AN D

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant N .

Applicant(s)

09/918,760

MOORE ET AL.

Examiner

Art Unit

Hoai-An D. Nguyen

2854

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;

2. Claims 1-12 and 14-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Narita (US 0055149217).

Narita discloses a system comprising:

- A drive motor (FIG.14, step motor 54) that can rotate in increments, with regard to claims 1, 9, 16, 20 and 24;
- A drive train (FIG.14, gear train 55) driven by the drive motor, with regard to claims 1, 9, 16, 20 and 24;
- At least one substrate transport mechanism (FIG.14, medium feed roller 57 and shaft 56) connected to the drive train and driven by the drive motor therethrough with regard to claims 1, 9, 16, 20 and 24;
- A medium feed mechanism, which plays the role of the substrate advancer and the substrate final advancer, in communication with the drive motor emitting control signals to the drive motor that cause the substrate to move to a point short of an

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- intended destination (column 2, lines 30-37) or to continue to the intended destination (column 2, lines 48-57), with regard to claims 1, 9, 16, 20 and 24;
- The means for stopping (the clutch mechanism) operates in response to a means for sensing substrate position (medium sensor) (column 7, lines 63-68 and column 8, lines 1-23), with regard to claim 2;
 - The means for finally advancing comprises means for incrementally advancing the substrate (column 1, lines 7-11), with regard to claim 3;
 - The drive motor is a position-controlled servo motor (column 5, lines 1-25), with regard to claims 4 and 10;
 - The drive motor is a stepper motor (column 1, line 38), with regard to claims 5, 11 and 21;
 - The means for finally advancing operates the stepper motor in full steps, in fractions of steps, and in microsteps (column 1, lines 49-54), with regard to claims 6, 7, 8, 21, 22 and 23;
 - The signals from the medium feed mechanism, which plays the role of the substrate advancer, cause the drive motor to stop the substrate a predetermined number of increments from the intended destination (column 2, lines 30-37), with regard to claims 12 and 18;
 - The signals from the medium feed mechanism, which plays the role of the substrate final advancer, cause the drive motor to advance by the predetermined number of increments (column 2, lines 48-57), with regard to claims 14 and 19;

- A medium sensor 12 (FIG.4) is implemented in this medium feed mechanism. As an inherent feature, it is somehow sending a signal to the medium feed mechanism, which plays the role of the substrate final advancer, to stop the drive motor when it detects that the substrate has arrived at the intended destination, (column 4, lines 61-67), with regard to claims 15 and 17;

The method claims 6-8 and 16-23 are clearly rejected based upon the rejections of the system claims above of the system since the claimed method steps are met by the normal and intended use of the system of Narita.

3. Claims 1, 3-12, 14, 16 and 18-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Nureki (US 006312177 B1).

Nureki teaches a system comprising:

- A drive motor (FIG.4, step motor 401) that can rotate in increments, with regard to claims 1, 9, 16, 20 and 24;
- A drive train (FIG.4, gear train 402 and 403) driven by the drive motor, with regard to claims 1, 9, 16, 20 and 24;
- At least one substrate transport mechanism (FIG.4, platen roller 57 and shaft 56) connected to the drive train and driven by the drive motor therethrough with regard to claims 1, 9, 16, 20 and 24;
- A motor control means, which plays the role of the substrate advancer and the substrate final advancer, in communication with the drive motor emitting control signals to the drive motor that cause the substrate to move to a point short of an

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- intended destination (column 4, lines 32-35) or to continue to the intended destination (column 4, lines 35-38), with regard to claims 1, 9, 16, 20 and 24;
- The means for finally advancing comprises means for incrementally advancing the substrate (column 1, lines 10-12), with regard to claim 3;
 - The drive motor is a position-controlled servo motor (column 1, lines 24-33 and FIG.2), with regard to claims 4 and 10;
 - The drive motor is a stepper motor (column 1, line 15), with regard to claims 5, 11 and 21;
 - The means for finally advancing operates the stepper motor in full steps, in fractions of steps, and in microsteps (column 3, lines 1-8), with regard to claims 6, 7, 8, 21, 22 and 23;
 - The signals from the paper advance mechanism, which plays the role of the substrate advancer, cause the drive motor to stop the substrate a predetermined number of increments from the intended destination (column 1, lines 24-57), with regard to claims 12 and 18;
 - The signals from the paper advance mechanism, which plays the role of the substrate final advancer, cause the drive motor to advance by the predetermined number of increments (column 2, lines 25-33), with regard to claims 14 and 19;

The method claims 6-8 and 16-23 are clearly rejected based upon the rejections of the system claims above of the system since the claimed method steps are met by the normal and intended use of the system of Nureki.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narita.

Narita teaches all that is claimed except that Narita does not specifically teach a backlash error in his system, but it is clear that at least under certain circumstances the backlash error must be smaller than the predetermined number of increments so that his system can function properly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the predetermined number of increments is greater than a number of increments representing a total possible backlash error in the drive train since this is what would be expected during the normal and intended use of the system of Narita.

6. Claims 2, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nureki in view of Barker et al. (4,519,700).

Nureki teaches all that is claimed, except for the followings:

- A means for sensing substrate position with regard to claims 2, 15 and 17

However, Barker et al teaches that a system comprising:

- A means for sensing substrate position (FIG.1, paper sensor 32 and column 6, lines 53-61).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Nureki to incorporate the teaching of a means

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for sensing substrate position taught by Barker et al. since Barker et al. teaches that such an arrangement is beneficial to control the feeding of the printing medium based on the signal from the optical sensor, so it will allow a printer to print images with high precision.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nureki.

Nureki teaches all that is claimed except that Nureki does not specifically teach a backlash error in his system, but it is clear that at least under certain circumstances the backlash error must be smaller than the predetermined number of increments so that his system can function properly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the predetermined number of increments is greater than a number of increments representing a total possible backlash error in the drive train since this is what would be expected during the normal and intended use of the system of Nureki.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoai-An D. Nguyen whose telephone number is (703) 305-3343. The examiner can normally be reached on M-F (8:00 - 5:30) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H. Hirshfeld can be reached on (703) 305-6619. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Hoai-An D. Nguyen
Examiner
Art Unit 2854

HADN.
January 9, 2003



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